Marvyn Inga

Physicist, 👤

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🎓 Education

University of Campinas
M.Sc. & Ph.D. in Physics

2013 – 2020
SP, Brazil

National University of Engineering
B.Sc. in Physics

2006 – 2012
Lima, Peru

📂 Summary

> Experience working with experimental optics and photonics in free space and fiber optics.

> Strong capacity to design science experiments and automate sophisticated scientific instruments.

> Ability to combine quantitative methods of mathematics with applied science in order to solve problems. Solid knowledge of linear algebra, multi-variable calculus, statistic and probability.

> Proficient in Linux and Windows with advance knowledge of Python, Julia and a variety of specialized libraries to acquire, process and present data (Conda, Numpy, Pandas, Matplotlib, Scipy, Jupyter, etc).

> Ample experience teaching students at the undergraduate level, especially in experimental Physics courses.

💬 Languages

English Professional

Portuguese Fluent

Spanish Native

⚗ Projects

Dispersion engineering in optical microcavities   UNICAMP, 2015 - 2020

> We tailored new light sources based on non-linear effects in microcavities. This project was an excellent opportunity to acquire new knowledge and skills in order to communicate equipment from our hardware; acquire, process and visualize millions of data points; and optimize processes using several PyLibraries.

Tunable light filters   SAMSUNG & UNICAMP, 2017

> It was a partnership between SAMSUNG and the Device Research Laboratory where I participated contributing to the colour theory transformations and algorithms necessary to identify colors emitted by the homemade filters. For this, we used an spectrometer and a Python package for colour science.

High sensitivity spectroscopy   UNICAMP, 2013 - 2015

> We demonstrated the possibility of using optical cavities for measurements of small absorption coefficients of liquid and solid samples. For this, I used a solid-state laser and an optical cavity of moderate finesse.

Magnetic properties of CuO_2 nanoparticles on graphite and graphene   UFABC, 2012

> Here, I focused on obtaining graphene from highly oriented graphite blocks using the scotch tape method. Subsequently, nanoparticles were obtained by laser ablation and deposited on graphene samples. The optical and magnetic characterization were done with the intention to detect changes in their properties.

📊 Publications

> L. Fujii, **M. Inga**, J. H. Soares, Y. A. V. Espinel, T. P. Mayer Alegre, and G. S. Wiederhecker. Dispersion tailoring in wedge microcavities for Kerr comb generation. Optics Letters Vol. 45, Issue 12, pp. 3232-3235 (2020). 🔗

> L. Fujii, **M. Inga**, J. H. Soares, T. P. Mayer Alegre, and G. S. Wiederhecker. Dispersion Control in Silicon Oxide Wedge Microdisks. In CLEO: QELS Fundamental Science, pp. JTu2A-111. Optical Society of America (2018). 🔗

👥 Conferences

> Oral presentation at Conference on Lasers and Electro-Optics (CLEO) 2020, San Jose, California, USA. 🔗

> Oral presentation at SBFoton Conference 2019, INPE, São Paulo, Brazil. 🔗